A dissertation, presented as part of the Double Degree requirements for the

Master in Economics from NOVA School of Business and Economics

&

Professional Master in Economics from INSPER

ELECTORAL OBSERVATION: EVIDENCE FROM MOZAMBIQUE

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Lisbon, Portugal – January 8, 2016

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Abstract

Electoral fraud is a common problem in young democracies. Election observers constitute one possible remedy. Yet, quantitative evidence of the exact effects of observers is scarce. Data on the random assignment of observers during Mozambique's 2009 general elections is used to estimate the impact that observers have on ballot fraud. It is shown that the presence of national observers reduces high levels of turnout and manipulation of ballots. The findings contribute to the understanding of the behavior of politicians and have implications for the implementation of observer missions.

Keywords*: electoral observation, observer effect, democracy promotion, Mozambique*

1 Introduction

Many developing countries are facing important democratization processes since the early 1990s. National elections constitute the basis of modern-day democracy. Although much has been achieved, elections in developing countries are often subject to irregularities, i.a. electoral fraud (Kelley, 2012). National and international observation teams play a meaningful role in democracy promotion and in the validation of electoral processes. They are believed to reduce fraud and increase the quality of elections (Kelley, 2012). Thorough quantitative assessment of the magnitude and kind of effects of the presence of observers has yet to be conducted. However, the existing qualitative and anecdotal research has recently been enriched with statistical evidence of using randomized field experiments. This paper complements existing literature by using similar techniques to evaluate the impact of observers on fraudulent activities in Mozambique

The main question addressed is whether observers manage to reduce fraud at the polling locations. The focus lies on ballot fraud that can be determined by high levels of turnout (ballot box stuffing), invalid votes (spoiling of ballot papers) and low levels of blank votes (validation of blank votes). Furthermore, we are interested in regional differences of the impact of observers that may arise from local party support, possible spillovers effects to other polling locations and whether the impact depends on type of observer. This paper examines two types of observers:

National observers that stay at one polling location and international observers visiting multiple locations on election day.

The 'observer effect' (Hyde, 2007) is estimated using electoral outcome data from the 2004 and 2009 Mozambique general elections, and data on the randomized allocation of the observation groups. A difference-in-difference estimation that accounts for the size of a polling station is proposed. The country wide results show that polling locations that are visited by domestic observers suffer less from fraudulent activities in comparison to the unobserved counterparts. The presence of observers reduces ballot box stuffing in areas where the incumbent party has a strong foundation. In general there is no reduction in the share of invalid votes. Nonetheless, the higher share of blank votes for observed locations indicates manipulation of ballot papers. None of these results are found when only including the sample over which international observers were randomized. This indicates that there is no ballot fraud to be deterred. Therefore, it is difficult to compare the two types of electoral observers. However, this proofs a common argument against international observation. Namely, that resourceful politicians recognize the international observers' tendency to visit conveniently located polling station, which in return leads to a higher concentration of fraudulent activities in areas that are less likely to be observed (Hyde, 2007).

The paper continues as follows. Section 2 provides contextual information on the political scene in Mozambique. Section 3, discusses electoral observation and is followed up by a literature review on testing the effect of electoral observation in section 4. The hypotheses are outlined in section 5. Sections 6 and 7 describe the data and fraud indicators that are used in the estimations. The research design and estimation strategy are explained in section 8 and 9. Section 10 examines the estimation results and section 11 concludes with a discussion on the implications of these results.

2 Context

In 2009, Mozambique had about 23.6 million inhabitants and was one of the poorest countries in the world, recording a gross domestic product per capita of 453 current U.S. dollars. With

official development assistance accounting for 19.2 percent of the gross national income in 2009, Mozambique ranked among the 10 countries that are most dependent on foreign aid.[1]

During the 1960s and 1970s, FRELIMO (*Frente de Libertação de Moçambique*), the independence movement, led the fight against the Portuguese colonial rule and established a single-party rule following the independence in 1975. Soon FRELIMO was challenged by RENAMO (*Resistência Nacional Moçambicana*), a guerrilla movement operating in central Mozambique and founded with foreign support from i.a. South Africa and Zimbabwe. The 16-year long civil war that followed ended with the Rome Peace Accord in 1992. Both parties agreed on multi-party elections and became each other's main political competitor. Both parties have a higher concentration of supporters in certain provinces, known as strongholds, that stem from the times of the civil war. Figure 1 shows the geographic location of Mozambique and provinces that are considered either FRELIMO or RENAMO strongholds.[2]

The general elections of October 2009 were Mozambique's seventh free multi-party elections. President and parliament elections were held in 1994, 1999, 2004 and 2009, elections for mayors and national assemblies in 1998, 2003 and 2008. The president is elected by direct popular vote in a two round run-off system. The 250 members of parliament are elected using the party-list proportional representation system with a different list for each constituency.[3] At the national level the legislative power has never changed. FRELIMO won every election; RENAMO ranking second. Since the first elections there has been a clear bi-polar political landscape in Mozambique. Figure 2 illustrates the turnout and shares of votes for FRELIMO, RENAMO and all remaining parties combined in each of the four parliamentary elections. The sudden fall in votes for RENAMO and its presidential candidate in 2004 was unexpected after two close elections in 1994 and 1999, but the decline in share of votes continued through 2009. A general sentiment of disappointment about earlier elections, a lack of interest and fraudulent activities by FRELIMO could have kept RENAMO voters away or "persuaded" them to vote for FRELIMO (Sitoe, 2006). Additionally, RENAMO suffered from internal conflicts.

[1] World Development Indicators, 2015

[2] There exist no general definition for the Mozambican party strongholds. General rule in this paper is that provinces with above average vote shares for either FRELIMO or RENAMO are their strongholds.

[3] Since the 2004 general elections, Mozambique contains 13 constituencies: 11 provinces, 1 for other African countries and 1 for Europe. Before 2004, only Mozambicans inside Mozambique were allowed to vote.

The National Electoral Commission (CNE) and the Technical Secretariat for Election Administration (STAE) are responsible for the direction, supervision and administration of the electoral process. Since 2004, national and international observers have been criticizing CNE and STAE for their nontransparent functioning and practical shortcomings (see Carter Center, 2005; EU EOM, 2004, 2009). Allegations of fraud have become a key characteristic of the general elections. RENAMO and other opposition parties usually file complaints about fraud committed by members of FRELIMO. The Constitutional Council has never ruled in favor of RENAMO by invalidating results nor did it demand recounts.

3 Electoral Observation

Electoral observation is not limited to the day of elections. Adebisi and Loremikan (2013) define three moments of observation: before, during and after election day. Several weeks before the elections, observers' main focus lies on the registration of candidates, campaign activities and fairness in media coverage. Usually, these long-term observers also analyze election laws and voter education. Observers on election day are mainly short-term observers that move in teams between polling locations or stay at one location during the entire day. The observers keep track of all to the election relevant activities as the casting and counting of ballots, possible violations of elections laws and the levels of violence or obstruction. In the days following the elections, the tabulation process, the publication of the final results and the handling of complaints by CNE are monitored. This paper focuses on the observers during election days.

In the past electoral observation was solely conducted by international organizations and foreign states. This has changed and domestic observation efforts have become increasingly relevant (Nevitte & Canton, 1997; Carothers, 1997). Both played a role during the 2009 Mozambican elections. The main Mozambican observation group, *Observatório Eleitoral* (OE) consists of religious civil society organizations, and some local governance NGOs.[4] OE conducted the only

[4] Observatorio Eleitoral's members are: AMODE (Associação Moçambicana para o Desenvolvimento), CEDE (Centro de Estudos de Democracia e Desenvolvimento), CCM (Conselho Cristão de Moçambique), CISLAMO (Conselho Islâmico de Moçambique), Comissão Episcopal de Justiça e Paz da Igreja Católica, FECIV (Instituto de Educação Cívica), LDH (Liga Moçambicana dos Direitos Humanos), and OREC (Organização para Resolução de Conflitos).

parallel vote tabulation (PVT).[5] The observers were to keep track of activities in one polling location, for the entire day. Allocation and reports of the PVT were made available for this research. Other domestic organizations that monitored the elections were the National Youth Council and the Mozambican Forum of Election Observation. The deployment of the United Nations Development Program (UNDP) observers, who are locally recruited foreign diplomats, was conducted in close coordination with Pedro Vicente, supervisor of this dissertation. These observers were instructed to change location on a regular basis following a predetermined route. There were other international groups that observed the elections in several or all provinces, namely the Commonwealth Observer Group, the Electoral Institute of Southern Africa, the Community of Portuguese Speaking Countries, the Electoral Commissions Forum of the South African Development Community, the African Union Observer Mission and the European Union Election Observation Mission (EU EOM, 2009).

4 Literature review

Electoral observation is considered to be an important tool in democracy promotion. The presence of credible and impartial observers creates confidence about the legitimacy and quality of an electoral process. Although governments could deny access, it has become a norm for young democracies such as Mozambique to invite international observers (Hyde, 2011; Kelly, 2012). International legitimacy became a condition for receiving international aid and maintaining regional relations or memberships because of the strengthening of democracy and human rights towards the end of the Cold War (Kelley, 2012). Besides international legitimacy, domestic legitimacy is just as important. The first multiparty elections in Mozambique are the perfect example for how essential national validation is to convince citizens that domestic institutions are reliable. During the 1994 first post-conflict elections there was a lot of international support to avoid a conflict similar to that in Angola in 1992. The incumbent party FRELIMO won the 1994 elections, which are regarded honest. RENAMO did not reject the monitored results while it had threatened a boycott in the case of an unfavorable outcome. The

[5] PVT observers keep track of all activities at a particular polling location or table. In the end of the day the final results of all the observed tables are centrally collected and published to benefit early acceptance of the results. Large differences with the final count would raise suspicion of fraud.

absence of observers would probably have led to different actions (Lyons, 2004). Thus, electoral observation is crucial for international and national legitimacy of electoral processes.

The intuition behind this rationale is as follows: "States, IGOs, NGOs, and scholars who support electoral observation argue that it increases voter and political party confidence in the electoral process, deters fraud when it exists, and generates a third-party evaluation of election quality for international and domestic audiences, thus making negative consequences for a leader who holds fraudulent elections more likely" (Hyde, 2010, 5-6). Critics however argue that especially international observers are often biased and label them as "glorified tourists" (Carothers, 1997). There exist case studies with anecdotal evidence and cross-national research trying to understand if, why and how electoral observation works (see e.g. Bjornlund, 2004; Kelley, 2012). However, these types of studies lack the ability to compare observed elections to a counterfactual world and thus experience problems attributing causal effects to monitoring elections (Hyde, 2010). Consequently, recent literature on electoral observation has shown grown interest in the use of randomized experiment designs to allocate and evaluate the impact that observers have. Hyde (2009) was the first to explore this area and treated the allocation of international observers in Armenia in 2003 "as-if" randomized. Her results and those of the limited other works using randomized experiments will be discussed next.

One of the outcome variables studied is the vote share of the party most likely to commit fraud. Significantly lower vote shares in observed locations would imply the deterrence of fraud committed by the affected party. Using the results of the 2003 Armenia elections, Hyde (2007) compares the incumbent vote share averages of the virtual treatment and control groups. There is a clear decrease in vote shares of the supposedly fraudulent incumbent among the observed locations. This result suggests a fraud deterrent observer effect. During the 2004 presidential elections in Indonesia, Hyde (2011) randomly assigned international observers to polling locations. She finds a positive effect of the presence of observers on the vote shares of the losing incumbent party. The results show that observer might have an effect on the final results, although not through fraud prevention. Enikolopov et al. (2013) show that the random assignment of observers to polling stations in Moscow during Russia's 2011 parliamentary

elections has a negative impact on the turnout and incumbent's vote shares. While all other parties benefit from the presence of observers, these results and anecdotal evidence suggest that the incumbent party used several ways of ballot fraud to inflate its vote share.[6] Observers were able to at least reduce these activities. Sjoberg (2012) randomly assigns domestic election observers during several elections in Azerbaijan, Georgia, and Kyrgyzstan and observes a reduction in turnout for observed locations across all elections. However, due to contradicting results with respect to turnout and invalid votes it remains unclear whether ballot fraud in particular is deterred. Turnout and overvoting (abnormal high turnout, e.g. higher than 100 percent) are the outcome variable of interest for Asunka et al. (2013). Using a randomized saturation experimental design in the context of Ghana's 2012 elections they show that domestic election observers reduce turnout and the probability of overvoting. They conclude that the probability of fraudulent activities is significantly reduced in the presence of observers.

Some studies also look for possible spillover effects. Enikolopov et al. (2013) find that polling stations close to observed stations also experience a reduction of fraud. However, in a study on irregularities during voter registration in Ghana, Ichino and Schündeln (2012) conclude that fraudulent activities were relocated to nearby polling stations where no observer was present. These stations experienced an increase in the number of registrations, whereas the number of registrations at the observed location decreased. Asunka et al. (2013) use the saturation aspect of their randomization design to address the issue of observer externalities. They find that in less competitive areas (strongholds) ballot fraud relocates to polling stations without observers.

5 Hypotheses

Hanlon and Fox's statistical analysis (2006) and observational evidence from the EU EOM about the 2004 elections create the expectations of electoral fraud by the incumbent party FRELIMO during the 2009 elections. The 2009 EU EOM confirms this expectation and recognizes ballot stuffing and spoiling votes as the main issues. Although FRELIMO does not seem to be worried about the negative consequences of monitoring it is likely that the presence of observers is

[6] Ballot fraud is a form of election day fraud and of great interest when studying the effect of observers. Section 8 discusses ballot fraud in more detail. However, at this point it is useful to understand that the literature defines two types of ballot fraud: 1) Ballot stuffing, indicated by high turnout rates and 2) Spoiling of ballot papers, indicated by high levels of invalid votes.

experienced as a cost. First, this can be the cost associated with the pronouncement of fraud to national and international communities and authorities. Second, these costs can be seen as the higher price of hiding fraud when an observer is present (Asunka, 2013). Therefore, the first and main hypothesis is: *The presence of electoral observers reduces fraud potentially committed by FRELIMO (Hypothesis 1).*

It is likely that strongholds facilitate fraud better than competitive areas. Large support in general, peer pressure and individual dependence on the ruling power create a corrupt atmosphere in which fraud is likely to be committed. The more fraudulent activities occur, the more fraud can be reduced. Therefore, *reduction of fraud due to electoral observers' presence is larger in FRELIMO's strongholds than in other provinces (Hypothesis 2).*

FRELIMO is a well-organized, hierarchical political party with power in all governmental levels and enjoys well-established support among the population. Possibly FRELIMO has the capacity to respond to presence of electoral observers by relocating fraudulent activities to polling location that are not visited, as it was the case in Ghana (see Asunka et al., 2013; Ichino and Schündeln, 2012). Consequently, *electoral observers cause the displacement of fraudulent activities to polling locations where no observer is present (Hypothesis 3).*

As explained in section 3, different types of electoral observation missions are present during the election day. Experimental evidence does not allow to draw any inference on the possible differences in impact between national and international agents. Nonetheless, critics of international electoral observation see some advantages of having mostly domestic observers. They know the local language, geographic area and culture. It is reasonable to assume that these observers are more aware of the situation around them and therefore, ceteris paribus, have a higher impact on fraud prevention. However, there exists fear that domestic observers might not be impartial and easier influenced or intimidated and thus less suitable for the job (Carothers, 1997). Though, domestic observers have proven the capability of reducing fraud. On average it is expected that in elections that are relatively free of violence this does not happen (Sjoberg, 2012; Asunka, 2013). Besides an expected advantage of domestic over international observers, the mobility of observers is often criticized. The problem with mobility is that it is rather difficult to

intercept any distortion in less than an hour of observation[7]. In addition these mobile observers miss out on a fraud-sensitive moment of the election day: the counting. Most ballot fraud occurs when votes are counted, such as manipulating ballots and ballot stuffing. In sum, *the presence of domestic fixed observers reduces fraud to a greater extent than the presence of international mobile observers (Hypothesis 4).*

6 Data

STAE is responsible for publishing the election results. This paper uses the official results (STAE 2006 and STAE 2012) which are published relatively long after the corresponding election. The results in both documents contain the same type of detailed information. For identification it shows the names of the province, district, administrative area, village, polling location (usually a school) and the table code. A polling station is divided into tables. Each table is designated for up to 1000 registered voters. This is often violated. The provided results for each table are the number of registered voters, votes for each of the presidential candidates and political parties, blank and invalid votes and the total votes in the ballot box of a table.

Using this information two datasets are constructed. The first dataset contains all the table level results of 2009, both presidential and parliamentary. The second dataset aggregates the table results into polling location outcomes for 2004 and 2009. Matching 2004 and 2009 on table level was not possible because table codes and the number of tables per polling station differ between the elections. Listwise deletion and corrections were performed leaving 12,425 observations in the table level dataset and 9,073 observations (3,830 from 2004 and 5,243 from 2009) in the polling location dataset. 3,238 polling stations could be matched over both years.

For each type of election (parliamentary and presidential) the turnout, share of invalid votes, share of blank votes and the vote shares of FRELIMO (or Guebuza) and RENAMO (or Dhlakama) are calculated. Other parties were excluded from the analysis, as they were not present in all provinces during the 2009 elections. It is not possible to compare different sets of parties among the two election years. Only the third presidential candidate Simango ran in all

[7] Based on their reports, the average time UNDP observers spent at a polling station in 2009 was 42 minutes.

provinces in 2009, but is not included because the impact on his vote share can be inferred from the vote shares of the other two candidates.

7 Measuring Fraud

The main objective is to test whether the presence of election day observers reduces fraud. The most common fraud committed on election day is ballot fraud (manipulation of ballot papers). This paper considers three types of ballot fraud, namely ballot box stuffing, spoiling ballot papers and validating blank votes. The first two are based on the literature, the third suggested by the author.

First, ballot box stuffing means that additional votes are fabricated and added to the real ballot papers or when announcing the results a higher number is documented for the fraudulent party. This leads to abnormally high turnout rates in affected polling stations. STAE admitted that poor registration of voters resulted in many invalid registrations due to a failure of deleting deceased voters from the system and 160.000 duplicated names (EU EOM, 2009). Being conservative, a turnout of over 95 percent is therefore suspicious and known as overvoting. Table 1 displays the percentage of polling locations in each province that are categorized by overvoting. The four provinces with the highest degree of overvoting are all FRELIMO strongholds. In two provinces around 17 percent of the stations have a turnout of 95 percent or more. This is in line with the observations of EU EOM. Figure 3 illustrates the distribution of turnout for the FRELIMO and RENAMO strongholds using univariate kernel density estimations. Notice that the distribution for FRELIMO has two peaks, one at 50 percent and another one just before 100 percent. The second peak suggests ballot stuffing by FRELIMO when comparing to the one peaked distribution in the RENAMO strongholds.

Second, the spoiling of ballot papers occurs when otherwise perfectly valid votes are made or labeled invalid by members of the polling station staff. During the elections of 2004, Hanlon (2006) noticed many votes for Dhlakama that were made invalid with additional ink fingerprints and other marks. The results and reports of 2009 suggest similar fraudulent behavior from FRELIMO-aligned members of the polling stations staff. Figure 4a and 4b are pictures of ballot papers showing this type of ballot fraud (MPPB, 2009). Table 2 shows the results of re-

qualifying invalid ballot papers. All invalid ballot papers were re-assessed by CNE in Maputo. Unfortunately, this happened in mixed bundles and therefore does not allow tracing back the votes. However, the results of re-assessment show a disproportional gain for Dhlakama, suggesting invalidation of ballot papers committed by FRELIMO.

Lastly, the validation of blank votes is suggestive since it is not based on any literature or observation reports. Figures 4a and 4b show that there is no room for the indication of a blank vote. To vote blank a voter leaves its ballot paper blank. This creates a situation in which fraud can be easily committed. A member of the polling station only needs to mark the preferred candidate or party on empty ballots. This type of fraud would lead to relatively low shares of blank votes. Figure 5 compares the kernel distributions of blank votes between the two strongholds. The FRELIMO distribution is skewed more to the left, indicating lower levels of blanks. This is not immediate proof for fraud but it is an interesting variable to look at in the analysis as it is basically a form of ballot stuffing without increasing the turnout.

Summing up, the objective is to test the observer effect on the levels of turnout, invalid votes and blank votes. In addition the vote shares of FRELIMO and RENAMO will be analyzed to see if there is a direct relation between fraud, or a certain type of fraud in particular, and a gain or loss of either party.

8 Research Design

The observer groups that will be studied here are the *national fixed* OE and *international mobile* UNDP. First, the 998 OE observers were randomized through the whole country on table level. While there exists no available information on the exact procedure for this randomization, there is enough confidence to treat the allocation of these observers as randomized.[8] OE supplied the initial allocation ('intention-to-treat' or ITT) and the records of the observers after the elections from which the actual treatment could be retrieved. These records only contained information on the location and the results of the specific table observed.

Second, the 67 UNDP locally recruited international observers were divided into 25 groups of 2 or 3. These groups were randomized at the polling location level within 24 districts indicated by

[8] The allocation passes the randomization test that was performed. The results are included in the appendix (A).

UNDP. The non-random allocation of treated districts causes biasedness. The bias does not allow for generalization of results. The results will only have validity within these 24 districts that contain an above average share of urban locations and are easier to reach. Figure 6 maps the UNDP sample districts.

9 Estimation Strategy

Since the randomization and allocation of OE observers is performed at table level, the first estimation strategy is based on the table level dataset of 2009. However, it lacks some precision because it might not have been always clear which exact table needed to be observed within a polling station.[9] The ITT variable shows no effects and the actual observation variable would cause biasedness in the results due to omitted variables. Another attempt using the ITT as instrumental variable for the endogenous actual treated also did not yield to any meaningful results.[10] Aggregating to the polling location level potentially solves this problem. There are 871 ITT stations out of which 50 where not visited during the election day. Despite creating a better fit this causes issues that will be dealt with below. The initial focus is on OE followed by the introduction of UNDP observers to the specification.

The basic specification estimates the effect β_8 of the presence of at least one OE observer at one or more tables in a specific polling location:

$$Y_{jl1} = \beta_0 + \beta_8 T_j + \varepsilon_{jl1}, \qquad (1)$$

where Y is one of the indicators of fraud or vote shares of either FRELIMO or RENAMO, j, l, and t=1 are identifiers for polling location, administrative area and time (specifically, 0 for 2004, 1 for 2009), and T_j is the treatment dummy variable, which takes the value 1 for an OE observed polling location.

When aggregating the treatment to polling location level it becomes correlated with the size of these locations as the observers were randomized on table level. This creates an endogeneity problem due to an omitted variable. Taking the number of tables per polling location m_{j1} out of the error term corrects this inconsistency. A second problem is that several papers show evidence

[9] Given the number of tables at a polling location, the treatment table was indicated by a number in ordinal form (e.g. 'third table'). It must have been unclear which table was meant exactly.
[10] The exact specifications and results can be found in the appendix (A).

that this simple specification causes a violation of the stable unit treatment value assumption (see Ichino and Schündeln, 2012; Enikolopov et al., 2013; Asunka, 2014). This basically means that due to spillovers, the model yields biased estimates of the causal effect (Rubin, 1974). Therefore, a spillover variable S_j is included that is 1 for being a control polling location in a village with treated location(s). A vector of administrative area dummies α_l was added. These dummies take the value 1 for each administrative area and correct for any other unobservable factors that might impact the outcome variable. This leads to the following specification:

$$Y_{jl1} = \beta_0 + \beta_1 m_{j1} + \beta_7 S_j + \beta_8 T_j + \alpha_l + \varepsilon_{jl1}, \qquad (2)$$

where β_7 is the spillover effect.

Although specifying m_{j1} solves the endogeneity problem as a result of the randomization on table level, it is also reasonable to believe that the impact of T_j on outcome Y is affected by the size of a polling location (the number of tables). The impact a single observer can have on the outcome of many aggregated tables is clearly smaller than when a polling location only contains one or two tables. A change in the coefficient of interest β_8 is expected, instead of a change in the conditional expectation of Y, E(Y|X). To capture this effect the main specification in a single time period includes an interaction term between the number of tables and treatment:

$$Y_{jl1} = \beta_0 + \beta_1 m_{j1} + \beta_7 S_j + \beta_8 T_j + \beta_9 (m_{j1} * T_j) + \alpha_l + \varepsilon_{jl1}. \qquad (3)$$

The observer effect in specification (3) is now $\beta_8 + \beta_9 m_{j1}$, and is thus dependent on the number of tables in a polling station.

Specifications (1) – (3) do not use the time dimension. The data does not allow for perfect matching between the years. Nonetheless, it is relevant to control for preexisting differences and common trends among the treatment and control groups, when possible. Including the 2004 election data results in the following difference-in-difference (DD) regression:

$$Y_{jlt} = \beta_0 + \beta_1 m_{jt} + \beta_2 S_j + \beta_3 T_j + \beta_4 t + \beta_5 (t * m_{jt}) + \beta_6 (m_{jt} * T_j) + \beta_7 (t * S_j) + \beta_8 (t * T_j) + \beta_9 (t * m_{jt} * T_j) + \alpha_l + \varepsilon_{jlt}, \qquad (4)$$

which can be improved by using the polling location fixed effects γ_j :

$$Y_{jt} = \beta_1 m_{jt} + \beta_4 t + \beta_5 (t * m_{jt}) + \beta_6 (m_{jt} * T_j) + \beta_7 (t * S_j) + \beta_8 (t * T_j) + \beta_9 (t * m_{jt} * T_j) + \gamma_j + \varepsilon_{jt}, \qquad (5)$$

with observer effect $\beta_8 + \beta_9 m_{jt}$ and spillover effect β_7. This specification will allow for full appreciation of the observer effect. Alternatively a DD regression could be run without using the table dependence in the treatment effect.[11]

The data is further limited to only the UNDP sample to allow for the analysis of the UNDP observer effect. The specification for UNDP evaluation is:

$$Y_{jt} = \mu_1 m_{jt} + \mu_4 t + \mu_{12}(t * V_{jt}) + \mu_{13}(t * U_{jt}) + \delta_j + \epsilon_{jt}. \qquad (6)$$

Specification 6 is a DD regression with UNDP treatment dummy U_{jt}, spillover dummy V_{jt} and δ_j as the polling station fixed effects. Because this treatment was randomized at the polling location level, interactions with the number of tables are irrelevant. However, m_{jt} is included as a useful proxy for the size of a location. Including the specification for OE gives the following regression:

$$Y_{jt} = \mu_1 m_{jt} + \mu_4 t + \mu_5(t * m_{jt}) + \mu_6(m_{jt} * T_j) + \mu_7(t * S_j) + \mu_8(t * T_j) + \mu_9(t * m_{jt} * T_j) + \mu_{12}(t * V_{jt}) + \mu_{13}(t * U_{jt}) + \delta_j + \epsilon_{jt}. \qquad (7)$$

Using this specification it is possible to compare the impact of OE, $\mu_8 + \mu_9 m_{jt}$, with that of UNDP, μ_{13}, to get an idea on how these different types of electoral observation relate to each other. The standard errors in all specifications are clustered at the village level.

10 Results and implications

The results presented here are based on the parliamentary election outcome variables.[12] Table 3 presents the summary statistics of all outcome variables across groups, time and samples. The biasedness due to the aggregation of table results can be inferred from the means in 2004. For example, treatment locations have 3 percentage points lower turnout than the control locations. Accounting for this bias, the difference in means between the two groups in 2009 is -3.8 instead of -6.8 percentage points. This is basically the simplified DD outcome. It shows that assuming randomization in 2009 would give inconsistent coefficients. The results presented here are based on the most complete estimation strategies (estimations (5) and (7)). Before estimating the results, it is useful to look at the change in distributions. The second peak in figure 3 of around 95 percent turnout suggests the presence of fraud in the FRELIMO strongholds. Figure 7 compares the distributions of turnout in treated (OE) and untreated polling locations for both

[11] See appendix (B) for specification.
[12] The presidential election variables show similar results and can be found in the appendix (C).

years. The changes in distributions are in line with table 3. The observed locations have overall lower turnout in both years. For 2009 there is a clear reduction in the second peak. This is not evident for 2004. The changes in distributions of the other outcome variables are harder to observe graphically and thus these variables are only discussed based on the regression results.

Using specification (5), table 4a presents the observer effect of OE on the fraud indicators and table 4b the effect on the vote shares of FRELIMO and RENAMO. For each outcome variable three regressions results are presented: 1) using all provinces, 2) only the FRELIMO strongholds and 3) only the RENAMO strongholds. The effect of interest is $\beta_8 + \beta_9 m_{jt}$. As examined and proposed by Braumoeller (2004), the effect needs to be calculated for each amount of tables. One way to calculate these effects with the corresponding standard errors is by estimating the model 19 (maximum number of tables) additional times for each dependent variable, while each time subtracting the number of tables from the original 'tables' variable. This way each variable 'table' is zero once, allowing the β_8 and its standard error to measure the full effect for a particular number of tables. To facilitate interpretation, table 5 illustrates this technique for the observer effect in locations with 1, 2 and 3 tables.[13] The results show significant impacts on turnout and blank votes in the whole country.

Turnout decreases by 2.5 - 4.9 percentage points for locations with up to 3 tables. The negative effect on turnout is only significant in FRELIMO strongholds. A regression without allowing for dependence on the number of tables the observer effect on turnout is -2.0 percentage points country wide.[14] The lower effect can be explained by looking at figure 8a, which graphically illustrates the effect per number of tables. For more than 7 tables the presence of observers has a positive effect on turnout. This suggests that fraud increases when the observer only covers a small part of the polling station.

Interestingly, there is a positive effect on blank votes across the country. The form of ballot fraud in which blank votes are validated is significantly reduced due to the presence of OE observers, while there seems to be no effect on the invalidation of votes. The effect in the whole country

[13] Polling stations with up to 3 tables are 80 percent of all polling locations in 2009, see table 6 for the frequencies and percentages per category 'number of tables'.

[14] Results following from this adjusted specification (5') are included in the appendix (C).

ranges from 2.3 percent points for locations with one table to 1.4 percent points for locations with three tables. Again the graphical representation (figure 8b) implies that observed stations with many tables are more sensitive to fraud.

The reduction of fraud influences the vote shares of the parties only in RENAMO strongholds. Table 5 and figure 9 show opposite effects on vote shares and suggest a shift from FRELIMO to RENAMO votes due to the presence of observers. In the FRELIMO strongholds, FRELIMO seems to be able to counteract a potential negative effect on its vote shares. A possible explanation for this could be a substitution of fraud. While ballot fraud is reduced, other types of fraud such as voter manipulation and vote buying may increase. Nonetheless, the decreasing effects of observers on fraud in the number of tables and the fact that the impact on FRELIMO's vote shares is positive for large stations suggest that FRELIMO is able to control outcomes in unobserved tables. The interaction term between 'Spill(OE)' and 'time' in table 4 tests for any spillovers outside of the station. There only seems to be a positive (fraud reducing) spillover on blank votes in FRELIMO strongholds, meaning that overall there is no evidence for the replacement of fraud.

To analyze the effect of the international UNDP observers, tables 7a and 7b show the results for specification (7). This is an extension of table 4 and estimation (5) by adding the UNDP treatment variable and the related spillover dummy, but only run on the UNDP sample districts. A reduced version of this estimation in which the OE variables were excluded (estimation (6)) gave similar results for UNDP and therefore will not be shown here. Table 6a shows that there is no evidence for any ballot fraud reducing effect of the UNDP observers. Nonetheless, some large effects are observed on the vote shares in RENAMO strongholds. RENAMO's vote shares in its strongholds increases by 8.9 percentage points in directly observed locations and by even 12.6 percentage points in other polling stations in the same village. Firstly, the larger spillover effect suggests that the initial allocation was not completely followed when the right village was visited. Secondly, voters seem to be more confortable voting for RENAMO, when UNDP observers are present. Although ballot box fraud was not reduced other types of fraud such as manipulation and violence around the polling station might have decreased. A safe feeling in

general due to the observers might be another reason to vote for RENAMO. However, FRELIMO does not lose vote share. Its vote share even increases for unvisited polling stations in visited villages. When these regressions are run on particular provinces, the same happens for observed stations. Given that the locations are in RENAMO strongholds it is possible that also FRELIMO affiliated people feel safer in the presence of observer to vote freely. This means that the vote shares of all other parties are negatively impacted by the presence of UNPD observers.

From a look at the OE treatment variables it can be concluded that the previous found fraud reducing effects have disappeared. There is only a small negative effect on the FRELIMO vote shares due to the presence of domestic observers, which might be related to another form of manipulation. A probable explanation for the absence of the observer effect is the fact that there is no ballot fraud in the UNDP sampled districts. As pointed out by critics of electoral observation, international observers tend to visit convenient and interesting areas (Hyde, 2007). These results show that FRELIMO identified the districts that international observers visit. In response to this, the fraudulent activities are reallocated to areas where these observers are less likely to go. A good comparison of the OE and UNDP observers is thus difficult. However, the results suggest an advantage of working with domestic observers to reduce ballot fraud.

11 Concluding remarks

In this paper the observer effect is estimated in different settings during the 2009 general elections in Mozambique. Four hypotheses are tested:

H1: The presence of electoral observers reduces fraud potentially committed by FRELIMO.

We find significant fraud reducing effects due to the presence of domestic observers.

H2: The reduction of fraud due to electoral observers' presence is larger in FRELIMO's strongholds than in other provinces.

The response to the presence of these observers differs across the country. Only in strongholds of the fraudulent party, ballot stuffing is significantly reduced. However, this has no implications for the vote shares, suggesting an increase in other types of electoral fraud. In the other provinces the reduction of ballot fraud is less evident. Yet, the fraudulent party is not able to recover the incurred losses.

H3: Electoral observers cause the displacement of fraudulent activities to polling locations where no observer is present.

Clear evidence for spillovers is not found. It is likely that this does not solely happen through ballot fraud but rather that the substitution of fraud type also plays an important role.

H4: The presence of domestic fixed observers reduces fraud to a greater extent than the presence of international mobile observers.

The results related to the international observers should be considered a warning. Their presence has no significant impact on any of the fraud indicators. As Hyde (2010) already noticed, observers can cause unexpected effects on, for example, vote shares. Although this may manifest in a reduction of other forms of electoral manipulation, these international observer groups are not working at their full potential because of a strategically acting fraudulent party. A perfect comparison between the different types of observers is hard to make. This first attempt helps understand how observers can affect election outcomes relatively to each other: the two groups seem to be complementary rather than one constituting a better tool than the other. This has implication for the implementation of future electoral observation missions. A good coordination and balance between international and national observers is advisable.

The research presented here suffers from issues with the basic randomized field experiment assumptions. The final specification accounts for these issues, but creates some noise. The results are meaningful and shed light on untouched topics such as the differentiation between different types of observers, the fraud via blank votes and the substitution between types of fraud. Further research is needed to better understand these topics. Current and future research will provide policy makers and involved organizations with fundamental knowledge to improve electoral observations.

Tables

Table 1: Percentage of stations with turnout higher than 95 percent. Calculated per province, based on parliamentary election results 2009.

Province	Percentage Overvoting	Number of stations
CABO DELGADO*	0.18%	546
GAZA*	17.24%	493
INHAMBANE*	4.28%	467
MANICA	1.42%	351
MAPUTO CITY*	0.00%	161
MAPUTO*	0.85%	353
NAMPULA	0.79%	757
NIASSA*	5.29%	435
SOFALA	1.35%	296
TETE*	16.91%	680
ZAMBEZIA	0.15%	648
Total	**5.07%**	**5,187**

Starred provinces are considered FRELIMO strongholds.

Table 2: Presidential vote shares of the elections compared with the re-qualified votes.

	GUEBUZA (FRELIMO)	DHLAKAMA (RENAMO)	SIMANGO (MDM)	TOTAL
Vote count	2,962,974	641,559	337,645	3,942,178
Percentage	75.2%	16.3%	8.6%	100.0%
Re-qualified by CNE	11,653	9,120	2,934	23,707
Percentage	49.2%	38.5%	12.4%	100.0%

Table 3: Means of outcome variables by group for each sample and year.

	Full Country		UNDP Sample		
	Control	Obs (OE)	Control	Obs (OE)	Obs (UNDP)
Means in 2004	Mean	Difference	Mean	Difference	Difference
Turnout	0.384***	-0.030***	0.403***	-0.017	-0.019
	(0.006)	(0.008)	(0.009)	(0.010)	(0.015)
Invalid vote share	0.055***	-0.007***	0.041***	-0.010***	0.004
	(0.001)	(0.002)	(0.003)	(0.003)	(0.006)
Blank vote share	0.056***	-0.004*	0.042***	-0.007**	-0.007
	(0.001)	(0.002)	(0.002)	(0.002)	(0.003)
FRELIMO vote share	0.609***	-0.019	0.673***	0.014	0.030
	(0.009)	(0.013)	(0.020)	(0.018)	(0.027)
RENAMO vote share	0.297***	0.023*	0.253***	-0.005	-0.029
	(0.008)	(0.012)	(0.018)	(0.017)	(0.025)
Means in 2009					
Turnout	0.526***	-0.068***	0.515***	-0.030**	-0.013
	(0.006)	(0.007)	(0.011)	(0.012)	(0.014)
Invalid vote share	0.041***	-0.001	0.033***	-0.003	-0.001
	(0.001)	(0.002)	(0.003)	(0.004)	(0.006)
Blank vote share	0.089***	0.005	0.069***	-0.011***	-0.011**
	(0.002)	(0.003)	(0.003)	(0.004)	(0.005)
FRELIMO vote share	0.752***	-0.034***	0.790***	-0.022*	0.020
	(0.006)	(0.008)	(0.013)	(0.013)	(0.014)
RENAMO vote share	0.187***	0.024***	0.126***	0.002	-0.021*
	(0.006)	(0.008)	(0.010)	(0.010)	(0.011)

Note: Standard errors clustered by village are in parentheses. * significant at 10%; ** significant at 5%; *** significant at 1 %.

Table 4a: Observer effect (OE observers) on indicators of fraud using specification (5).

	Turnout			Invalid vote share			Blank vote share		
	All provinces	FRELIMO Strongholds	RENAMO Strongholds	All provinces	FRELIMO Strongholds	RENAMO Strongholds	All provinces	FRELIMO Strongholds	RENAMO Strongholds
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Obs(OE) x time	-0.060***	-0.065***	-0.036	0.002	0.002	0.002	0.027***	0.021***	0.028***
	(0.018)	(0.025)	(0.024)	(0.004)	(0.005)	(0.008)	(0.006)	(0.006)	(0.01)
Obs(OE) x tables x time	0.012***	0.011**	0.007*	-0.001	-0.000	-0.001	-0.004***	-0.003***	-0.004**
	(0.003)	(0.004)	(0.004)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.002)
Spill(OE) x time	-0.010	-0.011	-0.010	0.002	0.002	0.001	0.007**	0.012***	0.002
	(0.009)	(0.013)	(0.010)	(0.003)	(0.003)	(0.005)	(0.003)	(0.004)	(0.005)
Obs(OE) x tables	0.000	0.002	-0.001	-0.002	-0.002	-0.002	0.000	0.000	0.000
	(0.004)	(0.006)	(0.004)	(0.001)	(0.001)	(0.002)	(0.001)	(0.002)	(0.002)
Tables x time	-0.012***	-0.015***	-0.002	0.002***	0.002***	0.003***	0.001	0.000	-0.002*
	(0.002)	(0.003)	(0.003)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Tables	-0.024***	-0.027***	-0.024***	0.001	0.001	0.001	-0.000	-0.001	0.001
	(0.002)	(0.004)	(0.003)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Time	0.142***	0.164***	0.089***	-0.020***	-0.019***	-0.022***	0.027***	0.017***	0.051***
	(0.01)	(0.013)	(0.014)	(0.002)	(0.003)	(0.005)	(0.003)	(0.003)	(0.005)
Constant	0.464***	0.511***	0.402***	0.052***	0.045***	0.062***	0.056***	0.051***	0.062***
	(0.007)	(0.011)	(0.010)	(0.002)	(0.002)	(0.004)	(0.002)	(0.003)	(0.004)
R-squared	0.3248	0.3335	0.3396	0.0556	0.078	0.0383	0.2655	0.1868	0.3758
Observations	8394	4954	3440	8394	4954	3440	8394	4954	3440

Note: Standard errors clustered by village are in parentheses. * significant at 10%; ** significant at 5%; *** significant at 1 %.

Table 4b: Observer effect (OE observers) on party vote shares using specification (5).

	FRELIMO vote share			RENAMO vote share		
	All provinces	FRELIMO Strongholds	RENAMO Strongholds	All provinces	FRELIMO Strongholds	RENAMO Strongholds
	(10)	(11)	(12)	(13)	(14)	(15)
Obs(OE) x time	-0.018	-0.016	-0.072***	0.019	0.015	0.066***
	(0.014)	(0.014)	(0.024)	(0.013)	(0.013)	(0.025)
Obs(OE) x tables x time	0.002	0.005*	0.012***	-0.001	-0.005**	-0.008
	(0.003)	(0.003)	(0.004)	(0.003)	(0.002)	(0.005)
Spill(OE) x time	0.001	0.013	-0.010	0.005	-0.013	0.026*
	(0.010)	(0.011)	(0.014)	(0.009)	(0.011)	(0.015)
Obs(OE) x tables	-0.003	-0.003	-0.006	0.003	0.004	0.003
	(0.004)	(0.005)	(0.005)	(0.004)	(0.005)	(0.006)
Tables x time	-0.005**	-0.016***	-0.011***	-0.008***	0.003	-0.006
	(0.002)	(0.002)	(0.003)	(0.002)	(0.002)	(0.004)
Tables	0.002	0.003	0.003	-0.002	-0.004	-0.002
	(0.002)	(0.003)	(0.003)	(0.002)	(0.003)	(0.003)
Time	0.148***	0.116***	0.241***	-0.088***	-0.063***	-0.162***
	(0.009)	(0.008)	(0.015)	(0.008)	(0.008)	(0.015)
Constant	0.607***	0.755***	0.386***	0.300***	0.168***	0.495***
	(0.007)	(0.008)	(0.010)	(0.006)	(0.007)	(0.011)
R-Squared	0.415	0.2844	0.622	0.3177	0.1931	0.476
Observations	8394	4954	3440	8394	4954	3440

Note: Standard errors clustered by village are in parentheses. * significant at 10%; ** significant at 5%; *** significant at 1 %.

Table 5: Observer effect (OE observers) by number of tables in polling location.

	All provinces			FRELIMO Strongholds			RENAMO Strongholds		
Dependent Variables	Locations with 1 table	Locations with 2 tables	Locations with 3 tables	Locations with 1 table	Locations with 2 tables	Locations with 3 tables	Locations with 1 table	Locations with 2 tables	Locations with 3 tables
Turnout	-0.049***	-0.037***	-0.025**	-0.054**	-0.042**	-0.031**	-0.029	-0.022	-0.014
	(0.015)	(0.013)	(0.011)	(0.021)	(0.018)	(0.016)	(0.020)	(0.016)	(0.013)
Invalid vote share	0.001	0.001	0.000	0.002	0.001	0.001	0.001	0.000	-0.001
	(0.004)	(0.003)	(0.003)	(0.004)	(0.004)	(0.003)	(0.007)	(0.006)	(0.005)
Blank vote share	0.023***	0.019***	0.014***	0.018***	0.016***	0.013***	0.024***	0.020***	0.016**
	(0.005)	(0.004)	(0.004)	(0.005)	(0.005)	(0.004)	(0.009)	(0.007)	(0.006)
FRELIMO vote share	-0.016	-0.014	-0.012	-0.011	-0.006	-0.001	-0.060***	-0.047***	-0.035**
	(0.012)	(0.010)	(0.009)	(0.012)	(0.011)	(0.010)	(0.020)	(0.017)	(0.014)
RENAMO vote share	0.018	0.017*	0.017*	0.010	0.005	-0.000	0.059***	0.051***	0.043***
	(0.012)	(0.010)	(0.010)	(0.011)	(0.010)	(0.010)	(0.022)	(0.019)	(0.017)

Note: Standard errors clustered by village are in parentheses. * significant at 10%; ** significant at 5%; *** significant at 1 %.

Table 6: Frequency and percentage number of tables per polling station until 10 in 2009.

Number of tables	1	2	3	4	5	6	7	8	9	10	11+
Frequency	2,296	1,241	675	378	246	177	112	72	26	12	8
Percentage	43.79%	23.67%	12.87%	7.21%	4.69%	3.38%	2.14%	1.37%	0.50%	0.23%	0.15%
Cumulative	43.79%	67.46%	80.34%	87.55%	92.24%	95.61%	97.75%	99.12%	99.62%	99.85%	100.00%

Table 7a: Observer effect (UNDP and OE observers) on indicators of fraud using specification (7).

	Turnout			Invalid vote share			Blank vote share		
	All provinces	FRELIMO Strongholds	RENAMO Strongholds	All provinces	FRELIMO Strongholds	RENAMO Strongholds	All provinces	FRELIMO Strongholds	RENAMO Strongholds
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Obs(UNDP)	0.018	0.019	0.016	-0.007	-0.004	-0.013	-0.003	-0.002	-0.004
x time	(0.013)	(0.017)	(0.017)	(0.007)	(0.005)	(0.018)	(0.006)	(0.005)	(0.014)
Spill(UNDP)	-0.004	-0.006	-0.005	-0.006	0.002	-0.020*	0.004	0.002	0.012
x time	(0.015)	(0.020)	(0.016)	(0.004)	(0.003)	(0.01)	(0.005)	(0.004)	(0.015)
Obs(OE) x	-0.011	-0.012	-0.005	0.012	0.010	0.027	0.002	0.003	-0.003
time	(0.03)	(0.037)	(0.043)	(0.01)	(0.009)	(0.026)	(0.009)	(0.008)	(0.029)
Obs(OE) x	0.002	0.002	-0.000	-0.003*	-0.001	-0.007*	0.001	0.000	0.002
tables x time	(0.005)	(0.006)	(0.007)	(0.001)	(0.001)	(0.003)	(0.001)	(0.001)	(0.004)
Spill(OE) x	-0.012	-0.002	-0.038**	-0.005	0.006	-0.025	0.008	0.006	0.013
time	(0.015)	(0.020)	(0.016)	(0.006)	(0.006)	(0.016)	(0.005)	(0.005)	(0.012)
Obs(OE) x	0.002	0.004	-0.003	-0.002	0.000	-0.007	0.000	-0.000	0.001
tables	(0.008)	(0.010)	(0.008)	(0.002)	(0.001)	(0.006)	(0.001)	(0.001)	(0.004)
Tables x time	0.000	-0.001	0.008*	0.004***	0.003***	0.006	-0.002**	-0.001	-0.004**
	(0.004)	(0.004)	(0.004)	(0.001)	(0.001)	(0.004)	(0.001)	(0.001)	(0.002)
Tables	-0.031***	-0.033***	-0.029***	0.001	-0.000	0.003	0.000	0.001	0.000
	(0.005)	(0.006)	(0.008)	(0.001)	(0.001)	(0.002)	(0.001)	(0.001)	(0.002)
Time	0.081***	0.090***	0.043*	-0.019**	-0.026***	-0.010	0.023***	0.021***	0.033***
	(0.018)	(0.023)	(0.022)	(0.008)	(0.009)	(0.019)	(0.005)	(0.006)	(0.012)
Constant	0.527***	0.545***	0.488***	0.040***	0.039***	0.049***	0.040***	0.037***	0.045***
	(0.017)	(0.019)	(0.031)	(0.004)	(0.004)	(0.01)	(0.003)	(0.003)	(0.009)
R-squared	0.349	0.3391	0.4428	0.0563	0.0958	0.0814	0.232	0.2441	0.2385
Observations	1812	1302	510	1812	1302	510	1812	1302	510

Note: Standard errors clustered by village are in parentheses. * significant at 10%; ** significant at 5%; *** significant at 1 %.

Table 7b: Observer effect (UNDP and OE observers) on party vote shares using specification (7).

	FRELIMO vote share			RENAMO vote share		
	All provinces	FRELIMO Strongholds	RENAMO Strongholds	All provinces	FRELIMO Strongholds	RENAMO Strongholds
	(10)	(11)	(12)	(13)	(14)	(15)
Obs(UNDP)	-0.004	-0.026	0.062	0.030	-0.015	0.089**
x time	(0.025)	(0.017)	(0.046)	(0.026)	(0.016)	(0.044)
Spill(UNDP)	0.005	0.003	0.063**	0.045*	-0.014	0.126***
x time	(0.019)	(0.017)	(0.027)	(0.024)	(0.013)	(0.042)
Obs(OE) x	-0.049*	-0.036	-0.085	0.023	0.026	0.012
time	(0.028)	(0.023)	(0.076)	(0.029)	(0.021)	(0.097)
Obs(OE) x	0.007*	0.009**	0.011	0.004	-0.005	0.014
tables x time	(0.004)	(0.004)	(0.011)	(0.005)	(0.003)	(0.015)
Spill(OE) x	-0.007	0.009	-0.029	0.039	0.010	0.069
time	(0.021)	(0.015)	(0.039)	(0.024)	(0.014)	(0.042)
Obs(OE) x	0.001	0.007*	-0.005	0.000	-0.002	0.004
tables	(0.005)	(0.004)	(0.012)	(0.006)	(0.004)	(0.018)
Tables x time	-0.013***	-0.017***	-0.021***	-0.013***	0.001	-0.026***
	(0.003)	(0.003)	(0.007)	(0.005)	(0.003)	(0.009)
Tables	-0.001	-0.003	0.002	-0.002	-0.001	-0.006
	(0.003)	(0.003)	(0.006)	(0.004)	(0.003)	(0.008)
Time	0.150***	0.105***	0.285***	-0.118***	-0.061***	-0.252***
	(0.023)	(0.017)	(0.055)	(0.020)	(0.015)	(0.048)
Constant	0.690***	0.793***	0.429***	0.248***	0.148***	0.503***
	(0.012)	(0.008)	(0.023)	(0.014)	(0.008)	(0.039)
R-Squared	0.3153	0.2774	0.6235	0.385	0.3175	0.6924
Observations	1812	1302	510	1812	1302	510

Note: Standard errors clustered by village are in parentheses. * significant at 10%; ** significant at 5%; *** significant at 1 %.

Figures

Figure 1: Mozambique, its geographic location with provinces and neighboring countries.

Red provinces are considered FRELIMO strongholds; blue provinces are those of RENAMO.

Figure 2: Turnout and vote share trends in Mozambican parliamentary elections

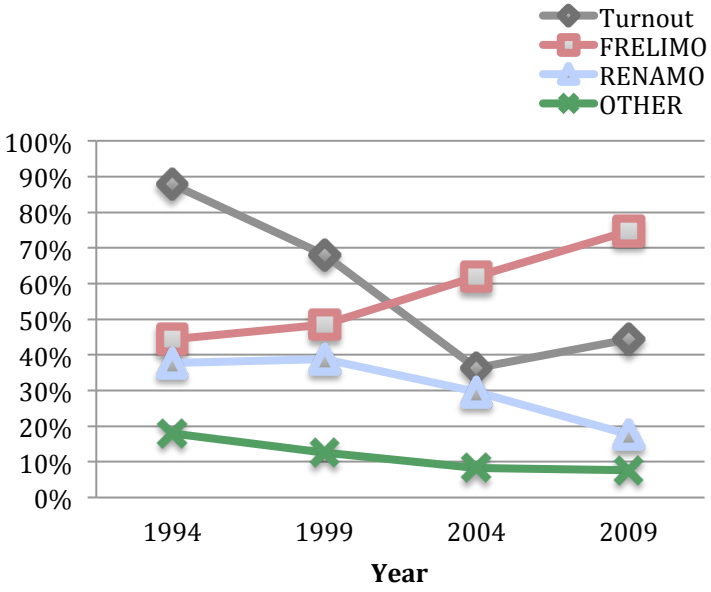


Figure 3: Distribution of turnout in 2009 by strongholds, based on parliamentary election results on station level.

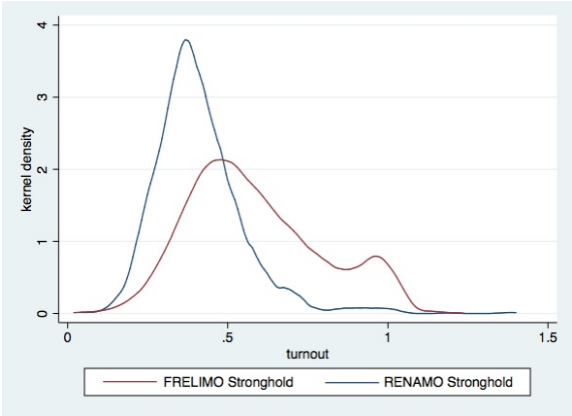
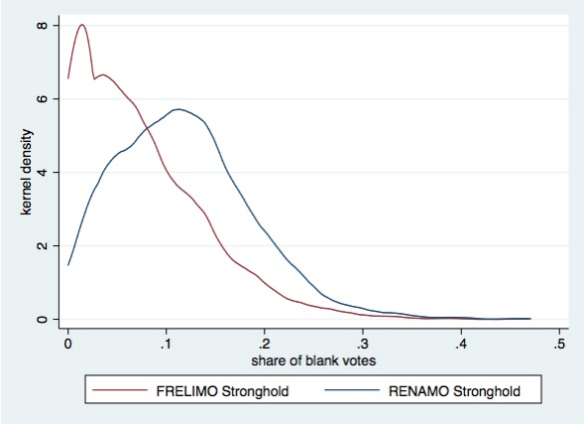


Figure 5: Distribution of blank votes in 2009 by strongholds, based on parliamentary election results on station level.



Figures 4a and 4b: Examples of spoilt ballot papers (MPPB, 2009).

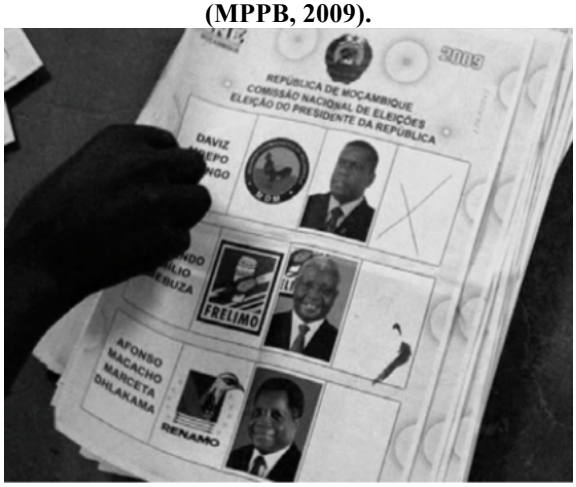


Figure 6: UNDP sampled districts and province capitals.

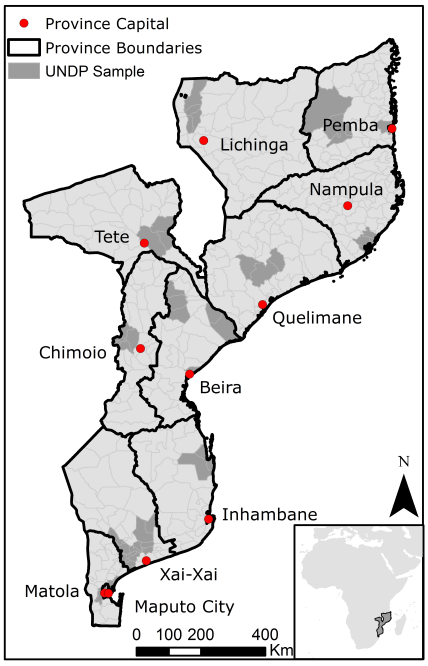
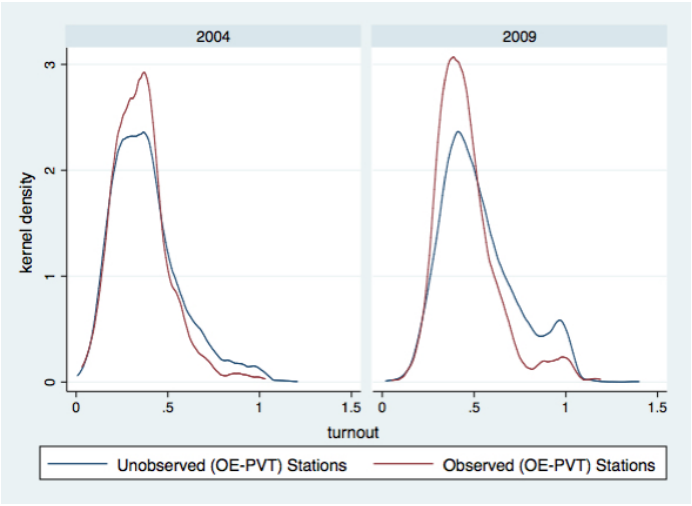
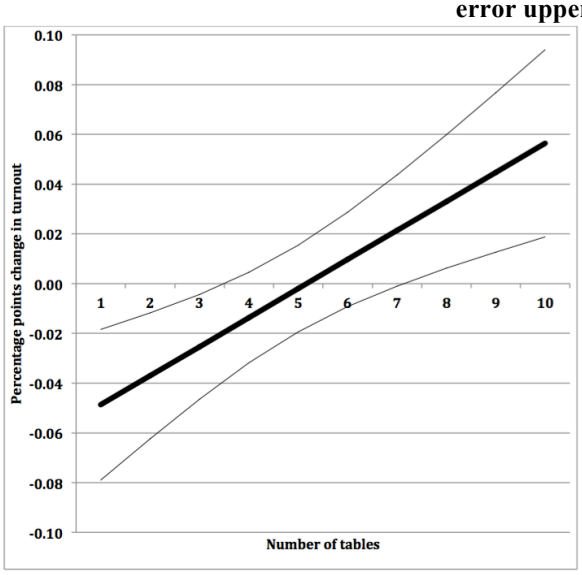
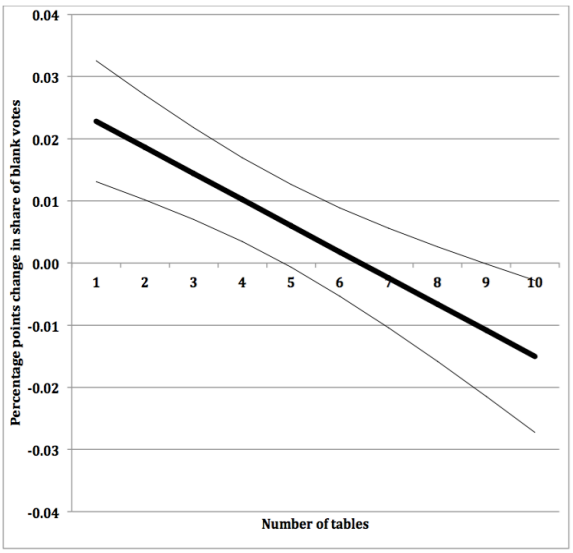


Figure 7: Distribution of turnout in both elections by treatment, based on parliamentary election results on station level.

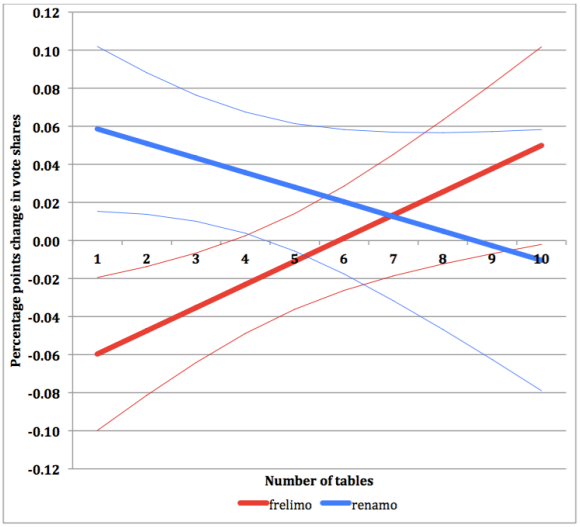


Figures 8a and 8b: Graphic representation of observer effect (OE observers) on (a) turnout and (b) share of blank votes by number of tables in polling location using all provinces. Thin lines are the 2 times standard error upper and lower bound.





Figures 9: Graphic representation of observer effect (OE observers) on vote shares of FRELIMO (red) and RENAMO (blue) by number of tables in polling location using only RENAMO strongholds. Thin lines are the 2 times standard error upper and lower bound.



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